

REMARKS

With the present Amendment claims 1-2, 5-37, 39-42, 44-46, 48-68 are now pending in the present application. The rejections under 35 U.S.C. 103 are respectfully traversed. However, in order to further the prosecution of this application, independent claims 1, 5, 6, 28, 29, 30, 31, 32, 39, 40, 44, 45, 56, 57, 59, 61, 63, 64, 66, 67 and 68 have been amended in order to further distinguish them from the cited art. Support for the claim amendments can be found in the specification and drawings, in particular in paragraph 0032 and Tables 5 and 17 of US 2003/0142629 (published version of the present application). No new matter has been added. Applicants believe that the present application as amended is now in condition for allowance of which prompt and favorable action is respectfully requested.

35 U.S. C. 103 Rejection

Claims 1 and 2 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Walding (US 6,031,845), Funk et al. (US 6,766,164) and Mawhinney et al. (US 5,898,674). Claims 32 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Walding (US 6,031,845) and Gillespie (US 6,014,377). Claim 34 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Walding (US 6,031,845), Gillespie (US 6,014,377) and Gopalakrishnan (US 7,110,466). Claims 35-38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Walding (US 6,031,845), Gillespie (US 6,014,377) and Numminen (US 6,687,499). Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Walding (US 6,031,845), Funk (US 6,766,164) and Mawhinney et al. (US 5,898,674). Claims 6-8, 10-13 and 24-28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Mawhinney (US 5,898,674) and Brady (US 3,922,508). Claims 29-31 and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Mawhinney (US 5,898,674), Brady (US 3,922,508) and Engbersen (US 5,271,000). Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Mawhinney (US 5,898,674), Brady (US 3,922,508) and Funk (US 6,766,164).

Claims 40-42 and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Numminen (US 6,687,499), Oommen (US 6,799,203) and Tiedemann (US 5,802,105) and Harvey (US 6,330,599). Claims 45 and 56 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Tiedemann (US 5,802,105) and Schuon (US 4,156,183). Claim 49 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) and Tiedemann (US 5,802,105) and Schuon (US 4,156,183) as applied to claim 45 above and further in view of Numminen (US 6,687,499). Claims 50-53 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) and Tiedemann (US 5,802,105) and Schuon (US 4,156,183) as applied to claim 45 above and further in view of Kobayashi (US 6,333,932). Claims 46 and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913), Tiedemann (US 5,802,105) and Schuon (US 4,156,183) as applied to claim 45 above and further in view of Ikeda (US 5,636,212). Claims 57 and 58 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913), Tiedemann (US 5,802,105), Kobayashi (US 6,333,932), Ikeda (US 5,636,212), Sjoblom (US 2002/0009053) and Schuon (US 4,156,183). Claim 59 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Tiedemann (US 5,802,105). Claim 60 was rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) and Tiedemann (US 5,802,105) in view of Engbersen (US 5,271,000). Claims 61-63, 65, 67 and 68 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Kobayashi (US 6,333,932), Sjoblom (US 2002/0009053), Brady (US 3,922,508) and Mawhinney et al. (US 5,898,674). Claims 64 and 66 were rejected under 35 U.S.C. 103(a) as being unpatentable over Malmivirta et al. (US 6,680,913) in view of Tiedemann (US 5,802,105), Kobayashi (US 6,333,932), Ikeda (US 5,636,212), Sjoblom (US 2002/0009053) and Schuon (US 4,156,183).

The MPEP recited the standard to be applied in an issue of obviousness under 35 USC 103. Section 2143.03 of the MPEP states in part:

ALL CLAIM LIMITATIONS MUST BE CONSIDERED

"All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The factual inquiries that are relevant in the determination of obviousness are determining the scope and contents of the prior art, ascertaining the differences between the prior art and the claims in issue, resolving the level of ordinary skill in the art, and evaluating evidence of secondary consideration. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 2007 U.S. LEXIS 4745, at **4-5 (2007) (citing Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966)). To establish a *prima facie* case of obviousness, the prior art references "must teach or suggest all the claim limitations." M.P.E.P. § 2142. As the Board of Patent Appeals and Interferences has confirmed, "obviousness requires a suggestion of all limitations in a claim." *In re Wada and Murphy*, Appeal 2007-3733 (citing CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003)). Moreover, the analysis in support of an obviousness rejection "should be made explicit." KSR, 2007 U.S. LEXIS 4745, at **37. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Independent claims 1, 5, 6, 28-31, 39, 45, 56, 61, 63, 67 and 68 have been amended to recite the element of "wherein each loop back packet includes a field to support persistence testing," or a similarly phrased element. Independent claims 32, 40 and 44 have been amended to recite the element of "wherein the first message includes a test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection," originally recited in now cancelled claim 38. And, independent claims 57, 59, 64 and 66 have been amended to recite the element of "wherein each of the plurality of test packets includes a field to support persistence testing," or a similarly phrased element. The claim amendments are supported, for example, in paragraphs 0032, Table 5 and Table 17 of the present application US 2003/0142629.

"In yet another aspect, techniques for collecting, logging, and reporting various statistics are provided, and the collected statistics may thereafter be used to derive various performance metrics such as throughput, packet error rate (PER), and so on. In yet another aspect, techniques are provided to support "persistence" in the testing (i.e., continued testing over connection and disconnection, with the variables used to store statistical information being reset only when instructed). In yet another aspect, techniques are provided to force the settings of certain auxiliary channels (e.g., so that the error rate of the channels may be determined)." *Present application (US 2003/0142629), paragraph 0032. Emphasis added.*

"LoopBackPersistence - set to `1` if the Loop Back mode is to be maintained by the terminal in the event of a connection closure or a lost connection, and to `0` otherwise." *Present application (US 2003/0142629), TABLE 5. Emphasis added.*

"RTAPTestPktPersistence - set to PktEnable 0x01 if the RTAP Test Packet Enable mode is to be maintained in the event of a connection closure or a lost connection, and to 0x00 otherwise." *Present application (US 2003/0142629), TABLE 17. Emphasis added.*

As amended, the pending claims recite the feature of persistence testing which ensures that the test mode is maintained in the event of a disconnection. In other words, the test mode will not reset or restart when a current connection is lost or closed. The element of the loop back packet or the test packet including a field to support persistence testing is not disclosed or even suggested in each of the cited references.

Malmivirta is directed towards testing data channel functionality in a radio apparatus. In contrast to maintaining the test mode in the event of a disconnection or to disclosing a packet to include a field to support persistence testing, Malmivirta discloses a testing method that is designed to avoid disconnections during testing. Thus Malmivirta's testing method does not deal with maintaining test mode in the event of a disconnection.

"The invention makes it possible to direct the testing of data channel functionality to those mobile station parts the operation of which is to be verified e.g. in connection with mobile station type approval tests. Furthermore, test equipment can be made simpler and tests avoid the difficulties caused by the operation of data terminal equipment. It is a further advantage of the invention that the connection between the test equipment and the mobile station tested will not be disconnected in the middle of a test. An additional advantage of the invention is that testing methods used by different manufacturers will become more uniform,

which improves the reliability of testing.” *Malmivirta (US 6,680,913), column 3, lines 30-41. Emphasis added.*

Walding is directed towards allocating bandwidth to calls in a wireless telecommunications system. On page 12 of the Office Action, Walding is cited for disclosing an overhead channel (i.e. auxiliary channel) carrying signaling data. In contrast to maintaining the test mode in the event of a disconnection or a packet including a field to support persistence testing, Walding discloses employing an overhead channel to maintain connections.

“The overhead channel is provided for carrying control information used to establish and maintain the downlink and uplink communication paths.”
Walding (US 6,031,845), column 1, lines 48-50.

Gillespie is directed towards an integrated wireless-wireline network for serving the Private Branch Exchange (PBX) network. On page 13 of the Office Action, Gillespie is cited for disclosing testing auxiliary control channels. There is no disclosure in Gillespie of maintaining the test mode in the event of a disconnection or a packet including a field to support persistence testing.

Regarding the now cancelled claim 38, the Office Action admits on page 15 that Malmivirta, Walding and Gillespie do not explicitly teach “the first message includes a test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection”. The “test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection” is a generalization of the specific implementation of the loop back packets or the test packets including “a field to support persistence testing,” as evidenced by the LoopBackPersistence and RTAPTestPktPersistence fields, respectively, shown in Tables 5 and 17. This further supports that each of Malmivirta, Walding and Gillespie does not disclose the elements of “wherein each loop back packet includes a field to support persistence testing” and “wherein each of the plurality of test packets includes a field to support persistence testing” or similarly phrased elements.

Funk is directed towards providing radio frequency conditions for testing wireless communications equipment. On page 7 of the Office Action, Funk is cited for disclosing test packets being formed for a particular time interval. But, there is no disclosure in

Funk regarding maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

Gopalakrishnan is directed towards variable rate message coding. On page 14 of the Office Action, Gopalakrishnan is cited for disclosing the control channel (auxiliary channel) being a DRC channel. But, there is no disclosure in Gopalakrishnan regarding maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

Numminen is directed towards testing the functioning of a radio apparatus. Numminen is cited on page 17 of the Office Action for disclosing that the first message includes a test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection. Applicants respectfully disagree with this characterization of Numminen in view of the pending claims. In contrast, Numminen discloses maintaining a connection on a transmission channel. That is, Numminen discloses a method designed to avoid a disconnection during test mode (*i.e.*, maintaining a connection). This is in direct contrast to the recited elements of the pending claims which recite maintaining test mode in the event of a disconnection.

“So test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel. The mobile station is kept in the test mode by Layer 3 signaling.” *Numminen (US 6,687,499), column 7, lines 18-21. Emphasis added.*

Mawhinney is directed towards performing non-disruptive diagnostics through a frame relay circuit. On page 7 of the Office Action, Mawhinney is cited for disclosing each packet further comprises a record for each test packet correctly received. Mawhinney discloses a dedicated logical channel for diagnostics and testing, but there is no disclosure of disconnecting the logical channel (corresponding to the test mode) or of maintaining the test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

“Utilizing the system and method described above, the present invention is directed to a novel method and system for performing diagnostics. Specifically, the present invention dedicates or reserves one of a plurality of logical channels that are multiplexed upon a single virtual circuit. This reserved channel is used exclusively for diagnostics, and in this way operates non-disruptively with the rest of the user traffic across the virtual circuit.” *Mawhinney (US 5,898,674), column 10, lines 55-62.*

Brady is directed towards coded telephone line testing equipment. Brady is cited on page 24 of the Office Action for disclosing holding a relay in the loopback position for a predetermined period (interpreted as observation interval) of time during which suitable loopback tests may be performed. In contrast to maintaining the test mode in the event of a disconnection, Brady only discloses switching the loopback circuit to an alternate pair of wires and disconnecting the remainder of the circuit. There is no disclosure of packets in Brady, and there is no disclosure of loop back packets or test packets including a field to support persistence testing.

Engbersen is directed towards the testing and evaluation of distributed networks. Engbersen is cited on page 38 of the Office Action for disclosing detecting errors, the test information including an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Engbersen does not disclose including a field in a packet to support persistence testing. Instead, Engbersen discloses a packet which includes a control field for the destination address and packet's priority level, and a payload field. But, there is no disclosure of maintaining the test mode in the event of disconnection in Engbersen.

"The packets containing the information to be transmitted usually have a maximum length of 32 bytes. Their structure includes a control field for the destination address and for a typebit indicating the packet's priority level, and a payload field containing the user-relevant information."
Engbersen (US 5,271,000), column 5, lines 29-34.

Oommen is directed towards over-the-air management of a mobile station (MS). Oommen is cited on page 47 of the Office Action for disclosing requesting statistics and performing diagnostic tests in the MS using a command issued from the network for testing purpose. There is no disclosure in Oommen regarding maintaining the test mode or employing a field in a packet to support persistence testing.

Tiedemann is directed towards evaluating the quality of transmission over digital communication channels. Tiedemann is cited on page 48 of the Office Action for disclosing collecting the first statistic occurs while performing testing function. In

contrast to employing a field in a packet to support persistence testing, Tiedemann discloses employing a field to toggle between two different testing modes. There is no disclosure of maintaining the test mode in the event of disconnection in Tiedemann.

“In an exemplary embodiment a flag (in the form of overhead bits) is set so as to specify the size of the test packet and control message data transmitted during a “dim and burst” phase of operation. Similarly, “blank and burst” transmissions are also identified by the setting a flag within an ancillary transmitted field (i.e., overhead bits).” *Tiedemann (US 5,802,105), column 10, lines 11-16.*

Harvey is directed towards virtual interfaces with dynamic binding in a computer network environment. Harvey is cited on page 48 of the Office Action for disclosing resetting all statistics in response to a message. There is no disclosure in Harvey of maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

Schuon is directed towards measuring the level of test signals over selected wide band frequency ranges. Schuon is cited on page 51 of the Office Action for disclosing selected rates are cycled between a maximum rate and a minimum rate. There is no disclosure in Schuon regarding maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

Kobayasi is directed towards connectionless communications system for transmitting data at a high speed, and a method for testing the system. Kobayasi is cited on page 53 of the Office Action for disclosing a test being started by issuing a test connectionless packet transmission request message, further discloses protocol type, packet type, number of records field, time interval, source address, sequence number in the packets, and further disclosing buffers for data packets. In contrast to maintaining the test mode in the event of a disconnection, Kobayasi discloses disconnecting a faulty connection and making it available for a new request. Kobayasi further discloses re-routing transmissions through a spare route once the faulty route is disconnected. But, there is no disclosure of a packet including a field to support persistence testing in Kobayasi.

“[T]he faulty route is disconnected and an ATM cell is transmitted through a spare route according to the reassignment VCC data.” *Kobayasi (US 6,333,932), column 310, lines 66, to column 311, line 1.*

“Upon receipt of the request, the line connection control unit 6 disconnects the request line from the terminal equipment 1 or common device 2 on which a failure has been detected by deleting the VPI/VCI of the request line from the terminal equipment 1 or terminal equipment 1 through the device management control unit 7 for controlling the terminal equipment 1 or common device 2 on which the failure has been detected. Simultaneously, the line connection control unit 6 deletes the request line and the entry of the available band from the use state table 11 in the main storage device 14. The available band is held as the request band corresponding to the line connection change request.” Kobayasi (US 6,333,932), column 304, lines 22-33. Emphasis added.

Ikeda is directed towards reserving burst bandwidths or bandwidths in an asynchronous transfer mode (ATM) network. Ikeda is cited on page 56 of the Office Action for disclosing a reservation request being issued with a maximum bandwidth and a minimum bandwidth. But, there is no disclosure in Ikeda of maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

Sjoblom is directed towards transmissions in both fixed networks and mobile networks. Sjoblom is cited on page 61 of the Office Action for disclosing identifying sequence number in test packets and forming test packets including the sequence number. There is no disclosure in Sjoblom regarding maintaining a test mode in the event of a disconnection or employing a field in a packet to support persistence testing.

As discussed above, the recited feature of persistence testing is not disclosed, taught or even suggested in each of the individual cited references. Therefore, no combination of any of these cited references can or does disclose, teach or suggest the recited elements of “wherein each loop back packet includes a field to support persistence testing,” “wherein the first message includes a test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection” or “wherein each of the plurality of test packets includes a field to support persistence testing”.

CONCLUSION

For the reasons stated above, the prior art references cited do not disclose, teach, suggest or make obvious the pending claims. Thus, Applicants respectfully request withdrawal of the 35 U.S.C.103 rejections based thereon.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Applicants do not believe that any fees are due regarding this amendment. However, if any fees are required, please charge Deposit Account No. 17-0026. Applicants encourage the Examiner to telephone the Applicants' attorney should any issues remain.

Respectfully submitted,

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